ABSTRACT OF THE DISCLOSURE

The present invention involves the isolation and characterization of the first discovered phytochrome-regulated transcriptional factor, a protein designated CCA1 which binds to the promoter region of the chlorophyll binding protein gene (*Lhcb1*3*) of *Arabidopsis*. The *Lhcb1*3* gene of *Arabidopsis* is known to be regulated by phytochrome in etiolated seedlings where a brief illumination by red light results in a large increase in the level of mRNA from this gene. A DNA binding activity, designated CA-1, that interacts with the promoter region of *Lhcb1*3* was previously discovered in cellular extracts. This binding activity was used to obtain a cDNA clone for a transcription factor that binds specifically to the *Lhcb1*3* promoter. Modification of the expression of CCA1 using techniques of genetic engineering results in unexpected changes in the timing of plant flowering. When CCA1 is overexpressed, it appears that the normal circadian rhythms of the plant are disrupted. The plants take a significantly longer time to reach flowering even in the presence of day length conditions that normally induce flowering. Thus, a method of extending vegetative growth and delaying flowering is provided.

15297380.1